

## REMARKS

Claims 39-51, 65, and 67-77 as amended, appear in this application for the Examiner's review and consideration. The claims have been amended to more particularly point out the claimed subject matter and to correct inadvertent minor spelling and editorial errors, but no new matter has been added.

The Office has yet to issue a restriction, but has asserted an election. Applicants find the Office's tactic confusing and misleading. Linking claims within the application were ignored. And the Office has determined without support or reference to any documentation or scientific reasoning that claims 65 and 67-77 are directed to an invention that is distinct or independent from that of claims 39-51. Without any supporting reasoning the Office alleges that there are two inventions and they are distinct because "the composition as claimed has utility for materially different processes such as the conversion of olefin into olefin oxides." (Office Action p. 3). This assertion is questionable at best. While the Office alleges that it is under no obligation to examine the claims, it is under obligation to provide a reasoned explanation for its actions such that applicants may understand the rejection and prosecution of the application. See C.F.R. § 1.104 and M.P.E.P. 707.07 (8<sup>th</sup> Ed. 2007).

Claims 39-51 stand rejected under 35 U.S.C. § 112, second paragraph, as allegedly being indefinite for the reasons set forth on pages 3-5 of the Office Action. The claims have been amended, rendering this rejection moot.

The Office Action alleges that the term "molecular sieves" is indefinite. As amended all claims refer to the plural term.

As to claim 43, the Office alleges that the term "the molecular sieves are at least one..." is confusing because it should either "at least one of the molecular sieves is" or "the molecular sieves are selected from." The Office is reminded that the claims are read in light of the specification and preferential word choice by the Office should not redefine the invention because it is the inventor who has the right to define the invention under §112, second paragraph. As amended the claim is to encompass molecular sieves that include any one of the following VS-n, VAPO-n, or VSAPO-n and mixtures thereof, which is the scope of the original claim.

While the Office fails to establish a formal rejection as to the use of the term "zeolite" in claim 39, it makes an off-hand remark of the term. Applicants are confused as to whether this is a rejection of claim 39 or merely commentary by the Office. In case this is a formal rejection by the Office, applicants submit that such a rejection is misplaced as it demonstrates the Office's misunderstanding of the invention.

Paragraph [0008] of the application states: “the composition comprises mainly supporter, binder, active component and molecular sieves component with incorporation of vanadium into skeleton.” Paragraph [0010] of the application states: “the active component of the composition includes large pore size or intermediate pore size zeolites, such as...” Hence, the active component of claim 39 has been replaced with zeolites as explained in detail in the specification. Consequently, if the claims are read in light of the specification, the claims are clearly described. The language suggested by the Office, again an issue of word choice, further confuses the scope of the invention contrary to the inventor’s intentions.

As applicants have amended the claims as to render this rejection moot, the rejection of claims 39-51 under 35 U.S.C. § 112, second paragraph, cannot stand and should be withdrawn.

Claims 39-43, 46-48, 50 and 51 stand rejected under 35 U.S.C. § 103(a) as purportedly rendered obvious over U.S. Patent No. 4,814,316 (the ‘316 patent) for the reasons set forth on page 6 of the Office Action. Applicants respectfully traverse.

The consistent criterion for determination of obviousness is whether the prior art would have suggest to one of ordinary skill in the art that claimed subject matter should be carried out and would have a reasonable likelihood of success. *In re Dow Chemical Co.*, 837 F.2d 469, 473, 5 U.S.P.Q.2d 1529, 1531 (Fed. Cir. 1988). As the Examiner is well aware, in order to form a proper basis for a rejection under 35 U.S.C. § 103, the prior art must provide some suggestion, either explicit or implicit, of the combination that allegedly renders a claimed invention obvious. *M.P.E.P.*, § 2142 (June 1998), *see also*, *Panduit Corp. v. Denisson Manufacturing Co.*, 1 U.S.P.Q.2d 1593, 1597 (Fed. Cir. 1987). The Examiner can satisfy the burden of showing obviousness of the combination only by showing some objective teaching in the prior art or that knowledge generally available to one of ordinary skill in the art would lead that individual to combine the relevant teachings of the references. *In re Sang Su Lee*, 277 F.3d 1338, 1343, 61 U.S.P.Q.2d 1430 (Fed. Cir. 2002); citing *In re Fritch*, 972 F.2d 1260, 1265, 23 U.S.P.Q.2d 1780, 1783 (Fed. Cir. 1992). The need for specificity is paramount, particular findings must be made as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected the components for combination in the manner claimed. *Id.* The Examiner’s conclusory statements do not adequately address the issue of motivation to combine; the factual question of motivation is material to patentability, and can not be resolved on subjective belief and unknown authority. *Id.*

The '316 patent purportedly discloses predominantly a FCC catalyst which essentially consists of a multi-component and multi-phase composition of microporous crystals. The composition is formed from non-zeolite molecular sieve, *i.e.* NZMS-37 (such as SAPO-37) in association with one or more microporous octahedral zeolite molecular sieve in a continuous matter. The '316 focuses on the re-growth of NZMS-37 on the microcrystals of the octahedral zeolite wherein two different phases are linked to each other. The '316 patent has metals other than Si, AL, and P may be included in the composition, including V, while it does not prefer V but is just a common option among others.

In contrast, the particular use of vanadium in the present invention plays a thoroughly different role and brings an unexpected effect. First, the present invention specifically defines a molecular sieve with Vanadium in the skeleton while the '316 patent is silent about vanadium in the skeleton. As the skeleton includes vanadium, the present composition comprising the sieve cannot only facilitate the desulfurization but also avoid the destruction of the structure of other components (such as zeolite Y) caused by the loss of vanadium, such that the present composition functions during the desulfurization with a stabilizing effect. This is because vanadium lies in the skeleton, such that vanadium will have less tendency of falling-off the molecular sieve and/or losing, in particular under high temperatures and/or hydrothermal conditions. Only from the description of the invention, can one skilled in the art determine that it is the specific choice of vanadium and the specific choice of the position of vanadium in the skeleton that brings stability to the composition.

Therefore, in view that vanadium must be in the skeleton, the present invention is not rendered obvious by the '316 patent. In addition, in view of the specific choice of vanadium and its unexpected effect upon the zeolite, the present invention contains unexpected advantages.

Accordingly, the rejection of claims 39-43, 46-48, 50 and 51, under 35 U.S.C. § 103(a) as rendered obvious by the '316 patent cannot stand and should be withdrawn.

Claims 39-51 stand rejected under 35 U.S.C. § 103(a) as purportedly rendered obvious over U.S. Patent No. 5,855,864 (the '864 patent) for the reasons set forth on pages 6 and 7 of the Office Action. Applicants respectfully traverse.

The '864 patent relates to a method for preparing mesoporous molecular sieves comprising metals, in particular titanium, with a neutral template, and use of the sieve in oxidation. Although the '864 patent refers to VS-1 and VS-2, it focuses on TS-1 and TS-2. Indeed, the '864 patent emphasizes that TS-1 and TS-2 are microporous materials and that they can be used to prepare mesoporous molecular sieves containing titanium or vanadium.

Thus, it can be seen that the technical field of the '864 patent is not the same as that of the present invention; VS-1 and VS-2 are less preferred in the '864 patent; and the role is different in the '864 patent than that of the present invention. Therefore, it is impossible for one skilled in the art to choose a less preferred technical feature (VS-1 and VS-2 instead of TS-1 and TS-2), further in combination with other special technical features of the invention to serve in a technical field different from that of the '864 patent and even a technical effect never disclosed or suggested in the '864 patent.

Contrary to the Office's position, the '864 patent teaches against the use of VS-1 and VS-2. When describing the deficiencies of the prior art, the '864 states: "Finally, V-substituted silicalite-1 and 2 (denoted VS-1 and VS-2) oxidation catalysts were also reported very recently (see for example Reddy et al., Catal. Lett. 28, 263-267 (1994) and Rao et al, J. Catal. 141(2) 604-611 (1993)). However, due to the embedding of V in the same silicalite microporous framework the catalytic oxidation activity of these molecular sieves was again limited to small organic substrates with kinetic diameters of less than 6Å." (The '864 patent, col. 6, ll. 35-42). And then **again** when describing the deficiencies of the prior art, the patent states: "We also disclose the catalytic activity of these Ti-HMS and Ti-MCM-41 (prepared by a  $S^+ X^- I^+$  templating route) derivatives for the selective peroxide oxidation of substrates that are too large to access the micropore framework of conventional TS-1, TS-2, VS-1 or VS-2." (The '864 patent col. 9, ll. 22-26).

In summary, it is obvious that either the '316 or the '864 patent purportedly discloses respectively only a few parts of the entire technical feature composing the technical solution of the present invention. However, the special combination of each technical feature is never disclosed or suggested by either document, especially the specific choice of vanadium which lies in the skeleton as one of the crucial features. Therefore, it is impossible for one skilled in the art to obtain any guidance from both documents, based only on a few parts of the technical solution in the absence of any teaching to serve in uncorrelated field (desulfurization compared with catalytic cracking of the '316 patent and oxidation in the '864 patent).

Accordingly, the rejection of claims 39-51, under 35 U.S.C. § 103(a) as rendered obvious by the '864 patent cannot stand and should be withdrawn.

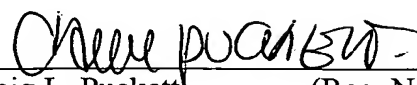
Accordingly, it is believed that claims 39-51, 65, and 67-77 are now in condition for allowance, early notice of which would be appreciated.

If any outstanding issues remain, the examiner is invited to telephone the undersigned at the telephone number indicated below to discuss the same. No fee is believed to be due for

the submission of this response. Should any fees be required, please charge such fees to  
Kenyon & Kenyon, LLP Deposit Account No. ~~10-0000~~  
11-0000.

Respectfully submitted,

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